Amendments

Improving Awareness & Advocacy of the Michigan Biosolids Program

Volume 6, Fourth Quarter November, 2005

From the Editor

A Loss of a Friend

On October 26, 2005, Dan Wolz, Superintendent of the Wyoming Clean Water Plant, died as a result of complications following a heart attack. He was 58. Most of your reading this knew Dan and what he was all about. But I want to tell a short personal story. Dan, along with Jeanette Best, formed the Biosolids Ad-Hoc Committee, later to be a full committee, in 1993. I was fortunate enough to become chair of the committee in 1995 with Dan and Jeanette's guidance. While chairing the committee for five or so years, Dan was always there with support and encouragement, and his contributions were priceless. Dan never lost sight of not only the mission of the biosolids programs across the state, but the entire wastewater treatment industry as well. "We need to tell our story," Dan would say, "of the good things we are doing." I will always remember Dan as having a positive attitude and a smile on his face, wherever he went, and I will miss him. Dan would want all of us to keep telling our story and to keep smiling because we are all doing something worthwhile.

Biosolids News

Phosphorus and Land Application of Biosolids

Application of biosolids to agricultural soils to meet the nitrogen (N) needs of agronomic crops often provides phosphorus (P) in excess of crop needs. This P over-application can result in build-up of soil above levels needed for optimum crop yields, and may also risk the P loss to surface and ground waters.

Because of the concerns regarding the influence of P on water quality, many state agencies now recommend or require P-based nutrient management plans for animal manure and biosolids application.

Nationally, agronomic application of biosolids represents a secondary, but significant, input of P to soils when compared with manure and inorganic P fertilizers. However, studies have found that lower risks exist for P loss when biosolids are applied.

Biosolids adds a significant amount of organic matter to the soil, which tends to improve infiltration and reduce erosion, thereby reducing runoff volume. Research has shown that tillage methods can have an effect on soil physical properties and P losses in runoff. These studies indicated that the application of biosolids reduced sediment yield in both no-till and conventional tillage fields. Other studies have found lower risks for P loss when biosolids are applied due to the use of chemical amendments such as, aluminum or iron salts used in municipal water treatment plants. As a result, P solubility in biosolids may be less a risk to water quality than P in manure and inorganic fertilizers because of the wastewater treatment plant processes.

With proper management, biosolids can become a valuable resource to the agronomic community, while limiting the risk of P loss to the environment.

Testing of biosolids and soil for P (and other nutrients) is critical for developing an effective biosolids land application management plan. Contact A & L Great Lakes Laboratories today to see how we can assist with your biosolids and soil testing requirements.

Biosolids Seminar

Biosolids Seminar 2006

The 2006 MWEA **Biosolids Seminar** is Scheduled for **March 2, 2006**. The location is Traverse City at the Park Place Hotel. Also, Dr. Lee Jacobs will be conducting his **Biosolids Workshop** at the Park Place Hotel **February 28 to March 1, 2006**. Space is limited to the first 30 registrants to Dr. Jacobs' Workshop.

Michigan Biosolids News

In conjunction with the state and federal Department of Energy, Shepherd Advisors and Coffman Electrical Equipment are doing a survey of all waste water treatment plants in Michigan to determine their present systems for treating biosolids. This study will be incorporated in an onsite combined heat and power education program in Michigan. The purpose of this study is to determine the potential for energy and Class A biosolids in the state. Michigan is an importer of energy in the form of Coal and Natural Gas for heat, electricity, and fertilizer. This is a constant drain on the states economy; and with the recent increases in energy prices, anaerobic digestion shows the potential of reducing this energy dependence while reducing and locking in future energy cost for waste water treatment plants. Preliminary studies have shown most waste water treatment plants can provide up to 2/3 of their energy on site. The state is also looking at how these plants can get 0% financing through the new Clean Renewable Energy Bonds.

To assist in this process please fill out the attached ***questionnaire*** and return to gmulder@steadypower.com or fax it to Greg Mulder at 616-452-1337. Stacy Mulder will also be following up on this questionnaire.

If you have any questions please Call
Greg Mulder
Coffman Electrical Equipment
616-452-8708

National News

Lincoln Journal Star
Thursday July 28, 2005
Deena Winter: **Egg-like structures cleaning up city's waste**

It's difficult to say which is worse: Standing on top of an egg filled with 1.1 million gallons of sewage sludge, or standing below an egg filled with 1.1 million gallons of sewage sludge. You've probably noticed those big white egglike structures west of North 27th Street, off Theresa Street, at the wastewater treatment plant. But do you know what they are or what's in them? The polite answer would be "anaerobic digesters" filled with "solids." The blunt answer would be gargantuan eggs filled with feces. Granted, the sludge is in better shape than when it arrived at the plant as raw sewage, but still.

By the time the city's sludge makes its way to the digesters, it's "about the consistency of a good thick chocolate shake," says Steve Crisler, Facilities Maintenance Coordinator for the Lincoln Wastewater System, while giving a tour of the top of one of the three eggs Tuesday. If you can forget what you're standing on, the egg offers a great view of the city. Just don't light a cigarette or mess with any levers. There's a hatch on top of the eggs, which confirms they're pretty much full.
The egg design, which originated in Germany, helps mix the sludge, Crisler explains. There's only a little bit of space at the top of the egg for "floatables" in the sludge to accumulate, and it's not difficult to skim it off. Sludge resides in the egg for 22 days, where it is cleaned through a digestive process similar to the body's, before moving on with a new name: "biosolids."
The top of the egg has its upside. There's no chance that the thing will collapse on you, just under you. But the vapors coming off the top are enough to send anyone underground. The elevator ride down is a bit stuffy because the sludge in the eggs is heated to 100 degrees to aid decomposition. This underground, concrete egg-holder has three rooms where the bottoms of the eggs are suspended mid-air. "Don't pull the plug," jokes Lincoln Public Utilities Administrator Steve Masters while standing beneath the looming behemoth. It smells better down here, but just knowing you're beneath an entire city's outhouse is a little unsettling. In three weeks, Crisler will get his first look inside one of the eggs after it's drained and cleaned. He's looking forward to it. "You couldn't keep me away," he says.
It will be the first time anyone has been in any of the eggs for a structural inspection since they were built in 1990, and it's such a rare event that people from other communities with egg digesters are flying in for a look. Crisler believes this will be the first egg taken out of service in the Midwest, if not the country. He's particularly interested in examining the top of the egg for signs of corrosion or debris that may have accumulated in the past 14 years, such as hair. He wants to see what kind of job the plant's equipment is doing. Once the egg is safe enough to enter, some lucky city employee will be dangled from the hole in the top to clean it with a fire hose — the Fire Department has agreed to help with this part. Then people in rain suits and protective gear will enter through the hatch in the bottom. (And you were excited about the annual cleaning of your cubicle.) Crisler gets "fired up" about his job, Masters said. "My kids and wife just shudder when we're on vacation and I see a wastewater plant," Crisler says. The rest of the staff is similarly passionate, Masters says. Around here, the

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magazines on the lobby coffee table include a "Biosolids" newsletter. "What we're talking about is a product that most people don't want to talk about," Masters said. But it's important. The draining of the egg, for example, is quite dangerous. It will be filled with methane gas and then water. The plant is undergoing an expansion that, when finished, will make it like a whole new plant, with cutting-edge technology. Technology has helped the plant get by with 12 fewer employees now than in 1990, when the eggs were hatched, even though the pipelines delivering Lincoln's unmentionables have grown by 30 percent. By the time they're done with the sewage, it's fit to be released into Salt Creek (but not fit to drink). However, these workers are probably almost as underappreciated as the microrganisms that have the thankless job of eating nutrients in the wastewater. But we'll get to that later.

Reach Deena Winter at 473-2642 or dwinter@journalstar.com.

MBT Activities

MBT at MSU Ag Expo

Our new **Michigan Biosolids Team Banner!**

On July 19-21, 2005, The MBT were among the 300 exhibitors displaying at the Annual MSU Ag Expo at the Expo grounds in East Lansing. The MBT expo exhibit concluded by having a BBQ for those who worked and attended the meeting on July 21. Our give-aways, which included cold bottled water and fresh popcorn, were a hit. Dozens of farmers signed up to receive biosolids in the future. In all, over 13,000 people attended the expo, up 11% from 2004.

MBT Meeting in Cadillac on August 18. And a look at the Geo-tubes at the Cadillac WWTP due to high Zinc in their biosolids.

MBT Meeting at the South Huron Valley WWTP on September 16. A Pig Roast Followed the meeting.

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Greg Merricle can't wait to eat!

Future Events

The Michigan Biosolids Team will be displaying at the Michigan Association of Conservation Districts annual conference in December, the Michigan Township Association Annual Conference in January, and at the MWEA/AWWA Joint Expo in February.

Popcorn Harvest at MSU

MSU set aside ½ acre of research ground, applied biosolids to it, and grew popcorn for the MBT to use at functions. Over 2000 pounds of popcorn were harvested. Lee Jacobs will let us know when the popcorn has been packaged and ready to use. Also, the MBT is currently looking for a popcorn popper to purchase for these functions. Photos were taken at the harvest. Steve Mahoney will make a short presentation at the November MBT Meeting in DeWitt.

Motley Popcorn Picking crew!!

Calendar of Events

MBT Meetings

Thursday, November 21, 2005, 10:00 a.m.
Location: SCCMUA WWTP, DeWitt
Topic: Holiday Potluck following the meeting

Thursday, January 18, 2006, 10:00 a.m.
Location: SCCMUA WWTP, DeWitt

Thursday, February 15, 2006
Location: SCCMUA WWTP, DeWitt

For more information on the meetings, please contact Todd Wibright at (616) 457-0720.

Biosolids Workshop

Tuesday, February 28 and Wednesday, March 1, 2006.
Location: Park Place Hotel, Traverse City

Seminar and Tour

Wednesday, March 1 and Thursday, March 2, 2006.
Location: Park Place Hotel, Traverse City
Topic: Winery and WWTP Tour, Seminar focusing on alternative uses, WEF, MDEQ, MDA updates

This quarterly newsletter is a joint effort of the **Michigan Biosolids Team partnership**. It is designed to provide timely, relevant information about the beneficial use of biosolids. Submit information of interest or comments to:

Steve Mahoney - mahoneys@michigan.gov
or telephone (517) 241-2508